NAME _____ DATE _____

5-9 Choosing the Appropriate Statistic

DECISION MAKING

Objective: To decide whether a given measure of central tendency is appropriate for a set of data.

Terms to Know

Measure of central tendency The mean, median, and mode describe how data are *centered*, and are therefore called measures of central tendency.

Guidelines for Choosing the Appropriate Statistic

- The *mean* is an appropriate measure of central tendency when the data are reasonably centered around it. However, an *extreme* value, one much greater or less than the other values, can distort the mean.
- When there is an extreme value that distorts the mean, the *median* is an appropriate measure of central tendency.
- When the data cannot be averaged or listed in numerical order, the *mode* is an appropriate measure of central tendency.

Example The points scored in basketball games so far this season are 56, 54, 45, 34, and 96. Decide whether the mean describes these data well. Explain.

Solution No. The mean is 57 and is greater than four of the five scores. It is distorted by the extreme score of 96.

Tell which measure of central tendency you think is generally used in each situation.

1. determining the brand of jeans in greatest demand
2. reporting yearly income for the owner and employees of a small company
3. summarizing results of a history test

Tell which measure of central tendency is being used in each situation.

4. Tiffany reported that half the months in a year had average temperatures above 65°F while the other half had average temperatures below 65°F.
5. The age of most of the students in a painting class was 20.
6. A random survey of freshmen showed that they prefer baseball more often than any other sport.

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5-9 Choosing the Appropriate Statistic *(continued)*

Make the appropriate decision for each situation.

7. The ages of the ten people on a bus are 31, 35, 35, 35, 35, 36, 37, 37, 38, and 38. Decide whether the mode describes these data well. Explain.

8. The weights of the five members of the golf team are 124 lb, 168 lb, 170 lb, 173 lb, and 175 lb. Decide whether the mean describes these data well. Explain.

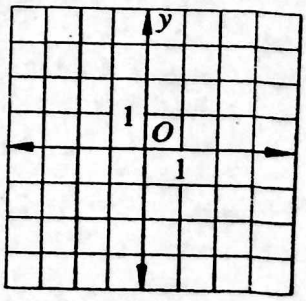
9. The types of cars parked along a city street are station wagon, hatchback, sedan, sedan, van, sedan, station wagon, sedan, van, and sedan. Decide which measure of central tendency is appropriate for these data. Explain.

10. The number of years that the nine employees of a small company have worked for the company are 4, 4, 4, 5, 6, 6, 7, 7, and 8. Decide whether the median or the mode is a better measure of central tendency for these data. Explain.

11. The amounts that Janice Carlson saved every month for a year were \$10, \$15, \$20, \$20, \$21, \$24, \$25, \$29, \$40, \$40, \$40, and \$40. Decide whether the mean or the mode is a better measure of central tendency for these data. Explain.

Spiral Review

12. Solve $-24 = \frac{x}{12}$. Check the answer. *(Lesson 4-4)*



13. Graph each point on the coordinate plane at the right: $A(2, 3)$, $B(-2, 1)$, $C(-1, -3)$ *(Lesson 3-8)*

14. The numbers of laps swum by five swimmers were 92, 86, 88, 90, and 87. Decide whether the mean describes these data well. Explain. *(Lesson 5-9)*

15. Find the next three numbers in the pattern:
95, 94, 92, 89, ___?___, ___?___, ___?___ *(Lesson 2-5)*